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Gabriele Corliano

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EXAMINER

CHEN, YAN LU

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,897	Applicant(s) CORLIANO, GABRIELE	
	Examiner YAN LU CHEN	Art Unit 2146	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/10/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 42 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 42 depends on itself. Because of recitation of "said session initiation protocol" in lines 11-12, it is believed claim 42 was intended to depend on claim 41 and has been treated as such for the remainder of this office action. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4, 5, 7-10, 12, 13, 16-28, 30, 31, 33-36, 38,39, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snelgrove, US Patent No.: US 6,535,592 B1 (hereinafter Snelgrove) and further in view of Bobde et al., US Patent No.: US 7,243,370 B2 (hereinafter Bobde).

Regarding claim 1,

Snelgrove substantially teaches:

A method for initiating a communications session involving two or more participants over a communications network (column 6, lines 32-34 and Abstract, lines 4-5 teach establishing of communication between at least entities over a telecommunication network.), comprising the steps of:

exchanging messages containing non-repudiable data between said participants to establish at least one trust relationship therebetween relating to the session, said non-repudiable data indicating one or more session control functions, a session control function being a control function to be assumed by an individual participant during the session (column 6, lines 36-49 and column 9, lines 41-52 teach the exchange of message between the entities to establish a trust communication; “each participant confirming their trust through a suitable method, such as by submitting a non-revocable password”. It also teach that communication session parameters (i.e. session control functions) are negotiated between the entities, where a user agree to pay for a service that the other entity will provide.); and

exchanging message to establish a session description in respect of the communication session(column 5, lines 1-5, “negotiating between said at least first and second entities an agree set of values for said parameters that define the desired communication”); and then

establishing the communications session (column 5, line 12 teaches the establishment of communication session after establishing a negotiation agreement.).

Snelgrove does not explicitly disclose that the message exchanged in respect of the establishment of at least one trust relationship and said message exchanged in respect of the establishment of a session description are exchanged using the same signaling protocol.

Bobde teaches combining the mechanism to establish the trust relationship with the SIP signaling operation (column 2, lines 8-12, “the present invention provides a scheme to integrate a security mechanism, such as Kerberos protocol or the NTLM protocol, into the message flow of the SIP signaling operation to allow a SIP client and a SIP proxy to authenticate each other”). Bobde further provides the advantage of protecting the integrity of the SIP request message by combining the security mechanism with the SIP signaling operation (column 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art, having the teachings of Snelgrove and Bobde before them at the time the invention was made to modify the system and method of Snelgrove to use the same signaling protocol for both trust establishment and session signaling as taught by Bobde.

One of ordinary skill in the art would have been motivated to make this modification in order to protecting the integrity of the SIP request message by combining the security mechanism with the SIP signaling operation in view of Bobde (column 1, lines 62-67).

Regarding claim 2, Snelgrove and Bobde teach the method according to claim 1, as described above.

Snelgrove further teaches the exchanging of message to establish at least one trust relationship comprises:

defining one or more control functions to be performed by at least one of the participants during the session (column 6, line 43-48, column 6, lines 36-37 and lines 42-45 teach the parameters that defines the service provided by one of the entities, and another entity liable to pay for the provided service.);

communicating the defined control functions to the participants (column 5, lines 1-5, 28-30 and column 6, lines 36-37 teach the communication of parameters to the end users.);

at each participant: choosing which, if any, of the control functions the participant wishes to assume (column 5, lines 28-35 teach the negotiation of communication based on the parameters, as to which entity agrees to pay what price and which entity provides the service agreed on.);

generating a non-repudiable message indicating the chosen control function(s); and transmitting the generated message to at least one of the other participants (column 5, lines 28-30 and column 6, lines 39-41 teach the negotiation of establishing a communication upon agreement by the participating entities, which means message are sent back and forth to establish that agreement.).

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Regarding claim 4, Snelgrove and Bobde teach the method according to claim 2, as described above.

Snelgrove further teaches the defining of one or more control functions comprises communicating charging policy data including data indicative of the control functions to a first one of the participants who has requested it from a service provider; and the communicating of the defined control functions further comprises communicating the charging policy data from the first participant to the other participants (column 7, lines 14-20 teach the pricing associated to the services that are communicated to the entities. Column 8 lines 22-29 teach multi-entity negotiation.).

Regarding claim 5, Snelgrove and Bobde teach the method according to claim 4, as described above.

Snelgrove further teaches that at each other participant the generated non-repudiable message is transmitted back to the first participant (column 5, lines 28-30 and column 6, lines 39-41 teach the negotiation of establishing a communication session upon agreement by the participating entities, which means message are sent back and forth to establish that agreement.).

Regarding claim 7,

Snelgrove substantially teaches:

A method for establishing at least one trust relationship between two or more participants and relating to a communications session

between said participants over a telecommunications network, said communications session being established by exchanging messages to establish a session description in respect of the communications session prior to establishing the communication session, said method comprising at least one participant performing the following:

requesting session control function data from a server, said data defining one or more control functions to be performed during the communications session (abstract lines 4-5, column 5, lines 43-48 and column 8, lines 22-29 teach that a set of parameters are provided by the server, where the parameter defines the tasks for the communication session. Which party is paying for what service and what the service provider will provide and task of checking that the warranted agreement is satisfied.);

choosing which, if any, of said control functions to assume (column 6, lines 35-37 teach the entities chooses the service they want by negotiating agreements);

distributing said control function data to at least one other participant over the telecommunications network (abstract lines 4-5 and column 33-42 teach that the communication session is established for more than one participants/entities. Column 6, lines 38-41 teach that one of the entity communicate with the service provider regarding the services.

Column 8 , lines 22-29 teach that multi-entities can participate in the negotiation which mean the parameters are distributed to them.); and receiving a non-repudiable message from the at least one other participant containing non-repudiable data indicating which, if any, of the control functions the at least one other participants has assumed (column 7, lines 10-14 teach that multiple entities are negotiating to establish the communication and column 6, lines 36-37 teach that agreements are established in the negotiation that means messages will need to be send back and forth to establish that agreement).

Snelgrove does not explicitly disclose that the message exchanged in respect of the establishment of at least one trust relationship and said message exchanged in respect of the establishment of a session description are exchanged using the same signaling protocol.

Bobde teaches combining the mechanism to establish the trust relationship with the SIP signaling operation (column 2, lines 8-12, “the present invention provides a scheme to integrate a security mechanism, such as Kerberos protocol or the NTLM protocol, into the message flow of the SIP signaling operation to allow a SIP client and a SIP proxy to authenticate each other”). Bobde further provides the advantage of protecting the integrity of the SIP request message by combing the security mechanism with the SIP signaling operation (column 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art, having the teachings of Snelgrove and Bobde before them at the time the invention was made to

modify the system and method of Snelgrove to use the same signaling protocol for both trust establishment and session signaling as taught by Bobde.

One of ordinary skill in the art would have been motivated to make this modification in order to protecting the integrity of the SIP request message by combining the security mechanism with the SIP signaling operation in view of Bobde (column 1, lines 62-67).

Regarding claim 8, Snelgrove and Bobde teach the method according to claim 7, as described above.

Snelgrove further teaches the distributing of said control function data further comprises distributing to the at least one other participant non-repudiable data indicating which, if any, of the control functions have been assumed (column 5, lines 28-30 and column 6, lines 39-41 teach the negotiation of establishing a communication upon agreement by the participating entities, which means message are sent back and forth to establish that agreement.).

Regarding claim 9,

Snelgrove substantially teaches:

A method for establishing at least one trust relationship between two or more participants and relating to a communications session between said participants over a telecommunications network, said communications session being established by exchanging messages to

establish a session description in respect of the communications session prior to establishing the communications session, said method comprising a server performing the following:

supplying, upon request from a participant, session control function data, said data defining one or more control functions to be performed during the communications session (abstract lines 4-5, column 5, lines 43-48 and column 8, lines 22-29 teach that a set of parameters are provided by the server, where the parameter defines the tasks for the communication session. Which party/entity is paying for what service and what the service provider will provide and that one of the entity are responsible for checking that the warranted agreement is satisfied.);

receiving non-repudiable data from said participants indicating which, if any, of the control functions each participant has assumed (column 5, lines 28-30 and column 6, lines 39-41 teach the negotiation of establishing a communication upon agreement by the participating entities, which means message are sent back and forth to establish that agreement.); and

storing said data (column 2, lines 19-25 teach that the service provider utilizes computer system, computer system includes storage. The data received would be stored.).

Snelgrove does not explicitly disclose that the message exchanged in respect of the establishment of at least one trust relationship and said message exchanged in

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respect of the establishment of a session description are exchanged using the same signaling protocol.

Bobde teaches combining the mechanism to establish the trust relationship with the SIP signaling operation (column 2, lines 8-12, “the present invention provides a scheme to integrate a security mechanism, such as Kerberos protocol or the NTLM protocol, into the message flow of the SIP signaling operation to allow a SIP client and a SIP proxy to authenticate each other”). Bobde further provides the advantage of protecting the integrity of the SIP request message by combining the security mechanism with the SIP signaling operation (column 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art, having the teachings of Snelgrove and Bobde before them at the time the invention was made to modify the system and method of Snelgrove to use the same signaling protocol for both trust establishment and session signaling as taught by Bobde.

One of ordinary skill in the art would have been motivated to make this modification in order to protecting the integrity of the SIP request message by combining the security mechanism with the SIP signaling operation in view of Bobde (column 1, lines 62-67).

Regarding claim 10, Snelgrove and Bobde teach the method according to claim 9, as described above.

Snelgrove further teaches checking the received non-repudiable data for any conflicts in respect of the assumed control functions between two or more participants;

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and resolving any detected conflicts by assigning any control function in respect of which there is a detected conflict to only one of said participants who indicated that they would assume the function (column 8, lines 30-32 teach a negotiation manager to ensure fair negotiation between the service provider entity and user entity in establishing a connection for telecommunication. It also teaches that agreements are reached between the entities, which mean negotiation manager will check and resolve any conflicts that might arise.).

Regarding claim 12,

Snelgrove substantially teaches:

A method for establishing at least one trust relationship between two or more participants and relating to a communications session between said participants over a telecommunications network, said communication session being established by exchanging messages to establish a session description in respect of the communications session prior to establishing the communication session, said method comprising one or more participants performing the following:

receiving control function data from a first participant over the telecommunications network, said control function data defining one or more control functions to be performed during the communications session (abstract lines 4-5, column 5, lines 43-48 and column 8, lines 22-29 teach that a set of parameters are provided by the server, where the

parameter defines the tasks for the communication. Which party is paying for what service and what the service provider will provide and task of checking that the warranted agreement is satisfied.);

choosing which, if any, of said control functions to assume (column 6, lines 35-37 teach the entities chooses the service they want by negotiating agreements);

generating a non-repudiable message containing non-repudiable data indicating which, if any, of the control functions have been assumed; and sending said message to the first participant (column 5, lines 28-30 and column 6, lines 39-41 teach the negotiation of establishing a communication upon agreement by the participating entities, which means message are sent back and forth to establish that agreement.).

Snelgrove does not explicitly disclose that the message exchanged in respect of the establishment of at least one trust relationship and said message exchanged in respect of the establishment of a session description are exchanged using the same signaling protocol.

Bobde teaches combining the mechanism to establish the trust relationship with the SIP signaling operation (column 2, lines 8-12, “the present invention provides a scheme to integrate a security mechanism, such as Kerberos protocol or the NTLM protocol, into the message flow of the SIP signaling operation to allow a SIP client and a SIP proxy to authenticate each other”). Bobde further provides the advantage of

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protecting the integrity of the SIP request message by combining the security mechanism with the SIP signaling operation (column 1, lines 62-67).

It would have been obvious to one of ordinary skill in the art, having the teachings of Snelgrove and Bobde before them at the time the invention was made to modify the system and method of Snelgrove to use the same signaling protocol for both trust establishment and session signaling as taught by Bobde.

One of ordinary skill in the art would have been motivated to make this modification in order to protecting the integrity of the SIP request message by combining the security mechanism with the SIP signaling operation in view of Bobde (column 1, lines 62-67).

Regarding claim 13, Snelgrove and Bobde teach the method according to claim 12, as described above.

Snelgrove further teaches receiving, together with said control function data, non-repudiable data indicating which, if any, of the control functions have been assumed by the first participant (column 5, lines 28-30 and column 6, lines 39-41 teach the negotiation of establishing a communication upon agreement by the participating entities, which means messages are sent back and forth to establish that agreement. The message would include what function the first participant assumed.).

Claim 16 is rejected on the same basis as claim 1. See the discussions regarding claim 1 above for details of this disclosure.

Claim 17 is rejected on the same basis as claims 1 and 16. See the discussions regarding claims 1 and 16 above for details of this disclosure.

Claim 18 is rejected on the same basis as claim 1. See the discussions regarding claim 1 above for details of this disclosure.

Regarding claim 19, Snelgrove and Bobde teach the method according to claim 1, as described above.

Snelgrove does not explicitly disclose that the communication protocol is the session initiation protocol.

Bobde further teaches a signaling protocol is a session initiated protocol designed for negotiating session feature between participants.

It would have been obvious to one of ordinary skill in the art, having the teachings of Snelgrove and Bobde before them at the time the invention was made to modify the system to establish communication between plurality of entities of Snelgrove to use session initiation protocol as taught by Bobde.

One of ordinary skill in the art would have been motivated to make this modification since SIP is well known in the art and is common protocol utilized to establish communications between two entities.

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Claim 20 is rejected on the same basis as claim 19. See the discussions regarding claims 1, 7 and 19 above for details of this disclosure.

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Claim 21 is rejected on the same basis as claim 19. See the discussions regarding claims 1, 9 and 19 above for details of this disclosure.

Claim 22 is rejected on the same basis as claim 19. See the discussions regarding claims 1, 12 and 19 above for details of this disclosure.

Claim 23 is rejected on the same basis as claim 19. See the discussions regarding claims 1 and 19 above for details of this disclosure.

Claim 24 is rejected on the same basis as claim 19. See the discussions regarding claims 1, 7 and 19 above for details of this disclosure.

Claim 25 is rejected on the same basis as claim 19. See the discussions regarding claims 1, 9 and 19 above for details of this disclosure.

Claim 26 is rejected on the same basis as claim 19. See the discussions regarding claims 1, 12 and 19 above for details of this disclosure.

Claims 27 and 35 are rejected on the same basis as claim 1. See the discussions regarding claim 1 above for details of this disclosure.

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Claims 28 and 36 are rejected on the same basis as claim 2. See the discussions regarding claims 1 and 2 above for details of this disclosure.

Claims 30 and 38 are rejected on the same basis as claim 4. See the discussions regarding claims 1, 2 and 4 above for details of this disclosure.

Claims 31 and 39 are rejected on the same basis as claim 5. See the discussions regarding claims 1, 2, 4 and 5 above for details of this disclosure.

Claims 33 and 41 are rejected on the same basis as claim 19. See the discussions regarding claims 1 and 19 above for details of this disclosure.

Claims 34 and 42 are rejected on the same basis as claim 23. See the discussions regarding claims 1, 19 and 23 above for details of this disclosure.

6. Claims 3, 14, 15, 29 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snelgrove and Bobde as applied to claims 1 and 7 above, and further in view of US 2003/0212638 A1 (hereinafter Zhang et al).

Regarding claims 3, 14, 15, 29 and 37 Snelgrove and Bobde teach the method according to claims 2, 7, 28 and 36 as described above.

Snelgrove further teaches that the message exchanged between the participants and the service provider includes data indicating the selected functions. Since negotiation agreement is established as taught in column 8, lines 21-29.

Snelgrove does not explicitly disclose that the participant selecting the function uses a digital signature for the message data.

Zhang et al. teach that digital signatures are used when parties formalize an agreement that is acknowledged by each party (see ¶ [0018]).

It would have been obvious to one of ordinary skill in the art, having the teachings of Snelgrove, Bobde and Zhang et al. before them at the time the invention was made to modify the method of Snelgrove to use digital signature in the establishing of agreements as to pay for the function/service that were selected as taught by Zhang et al. One of ordinary in the art are familiar with the fact that digital signature are become the equivalence of signature that are ink on paper, since many services are provided over the internet, digital signature are commonly used for agreements established electronically.

One of ordinary skill in the art would have been motivated to make this modification in order to make the agreement more binding using the digital signature in view of Zhang et al.

7. Claims 6, 11, 32 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snelgrove and Bobde as applied to claims 1, 9, 27 and 35 above, and further in view of US 7058165 B2 (hereinafter Koskinen et al.).

Regarding claims 6, 11, 32 and 40 Snelgrove and Bobde teach the method according to claims 4, 9, 30 and 38 as described above.

Snelgrove further teaches a negotiation manager that manages the negotiation between the entities that are trying to establish a communication. The negotiation manager makes sure that the agreements between the entities are reached before the communication is established.

Snelgrove does not explicitly disclose that the first participant assumes those control function defined within the charging policy which no other participant has chosen to assume.

Koskinen et al. teach that first participant (i.e. the entity that initiated the connection service) would assume the responsibility of paying for the service as agreed upon to establish the connection for a communication session (see column 1, lines 10-15).

It would have been obvious to one of ordinary skill in the art, having the teachings of Snelgrove, Bobde and Koskinen et al. before them at the time the invention was made to modify the method of Snelgrove to have the first entity assuming control function related to the charging policy that were not assumed by other entity as taught

by Koskinen et al. It has been common practice in the telecommunication industry to have the call initiator pay for the communication service.

One of ordinary skill in the art would have been motivated to make this modification in order to establish a communication session where service provide are guaranteed that all services provided would be paid for by the receiving service entities. Since it has been common practice for the call initiator to pay for the service, it makes sense to give the service charging responsibility to the call initiator entity during the negotiation to assume the paying responsibility as taught by Koskinen et al.

Response to Arguments

8. Applicant's argument with respect to claims 3, 6, 11, 14 and 15 regarding rejection under 35 U.S.C. section 102 in view of Snelgrove have been reviewed and the Examiner has withdrawn the 102 rejections for claims 3, 6, 11, 14 and 15 since the 102 rejections for these claims were due to an typographic error.

9. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yan Chen whose telephone number is (571) 270-1926. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. C./
Examiner, Art Unit 2146

/JEFF PWU/
Supervisory Patent Examiner, Art Unit 2146